Claims

What is claimed is:

1) A system for selecting a foreground region of an image, given a set of pixels defining the boundary of the foreground region of the image, comprising:

a component to determine a foreground value (F) and an opacity value (a) for each pixel on the set wherein a is determined *via* a subpixel edge-offset to facilitate a separation of the foreground region from background portions of the image and to combine the foreground region with background portions from a new image.

2) The system of claim 1, wherein the foreground value (F) and opacity value (a) are employed to mix the foreground region of the image with a subsequent image background region.

3) The system of claim 1, wherein Intelligent Scissors are employed to define the foreground region of the image.

4) The system of claim 1, wherein the background portions and foreground regions of the image are mixed within pixels along the foreground region according to the equation $\mathbf{I} = \alpha\mathbf{F} + (1-\alpha)\mathbf{B}$.

5) The system of claim 4, wherein the component selects colors for each pixel on the set for the background portions or the foreground regions of the image according to borrowing a color value from a neighboring pixel location.

6) The system of claim 4, wherein the component selects colors for each pixel on the set for the background portions or the foreground regions of the image according to an average of several nearby pixels.

7) The system of claim 4, wherein the component selects colors for each pixel on the set for the background portions or the foreground regions of the image according to a stochastically selected, weighted average of nearby pixels.

8) The system of claim 4, wherein the component selects colors for each pixel on the set for the background portions or the foreground regions of the image according to a pixel generated by a texture reconstruction process applied to nearby pixels.

9) The system of claim 4, wherein the component selects colors for each pixel on the set for the background portions or the foreground regions of the image according to a mixture of an intensity value and the pixel value generated by at least one of an average of several nearby pixels, a stochastically selected, weighted average of nearby pixels, and a pixel generated by a texture reconstruction process applied to nearby pixels.

10) The system of claim 1, wherein the component determines an edge orientation *via* a gradient applied to the image to produce a resultant gradient vector that is perpendicular to the edge orientation.

11) The system of claim 10, wherein the component determines gradient magnitudes along the resultant gradient vector in order to determine the sub-pixel edge offset.

12) The system of claim 11, wherein the component employs at least one of bilinear and bi-cubic interpolation in order to determine the gradient magnitudes.

13) The system of claim 11, wherein the component employs anisotropic smoothing in order to determine the gradient magnitudes.

14) The system of claim 11, wherein the component employs Gaussian smoothing to reduce pixel-wide noise associated with the image.

15) The system of claim 11, wherein the component fits a curve to the gradient magnitudes in order to determine the subpixel edge offset.

16) The system of claim 15, wherein the component integrates over the area defined by the subpixel edge offset and at least one side of the pixel in order to determine the opacity value (a).

17) A method for integrating extracted images, comprising:
selecting a set of contour pixels defining a foreground region of an image;
determining a subpixel edge offset from the center of each contour pixel; and
determining an area of a portion of each contour pixel utilizing the subpixel edge offset to determine an opacity value (a) for each contour pixel.

18) The method of claim 17 further comprising,
utilizing the opacity value (a) to smoothly mix the foreground region of the image with a subsequent background region associated with another image.

19) The method of claim 17, further comprising,
determining an edge orientation *via* a gradient applied to the image to produce a resultant gradient vector that is perpendicular to the edge orientation.

20) The method of claim 19, ~~wherein the component determines~~ gradient magnitudes along the resultant gradient vector in order to determine the subpixel edge offset.

21) The method of claim 20, further comprising,
applying anisotropic smoothing in order to determine the gradient magnitudes.

22) The method of claim 21, further comprising,
applying Gaussian smoothing to reduce pixel-wide noise associated with the image.

23) The method of claim 20, further comprising,
fitting a curve to the gradient magnitudes in order to determine the subpixel edge offset.

24) The method of claim 23, further comprising,
integrating over the area defined by the subpixel edge offset and at least one side of the pixel in order to determine the opacity value (a).

25) A computer-readable medium having computer-executable instructions for performing the method of claim 17.

26) A system for integrating extracted images, comprising:
means for selecting a set of contour pixels defining a foreground region of an image;
means for determining a subpixel edge offset from the center of each contour pixel; and
means for determining an area of a portion of each contour pixel utilizing the subpixel edge offset to determine an opacity value (a) for each contour pixel.

27) The system of claim 26 further comprising,

means for utilizing the opacity value (a) to smoothly mix the foreground region of the image with a subsequent background region associated with another image.

28) A signal facilitating integration of extracted images, comprising:

a signal for communicating information associated with an image;

a first component for selecting a set of contour pixels defining a foreground region of the image *via* the signal, wherein the component determines a subpixel edge offset from the center of each contour pixel, and determines an area of a portion of each contour pixel utilizing the subpixel edge offset to determine an opacity value (a) for each contour pixel; and

a second component utilizing the opacity value (a) *via* the signal to smoothly mix the foreground region of the image with a subsequent background region associated with another image.

29) The signal of claim 28, wherein the signal is communicated over at least one of a network system and a wireless system.